

H. Commercial Operations and Support Savings Initiative (COSSI)



The purpose of the COSSI program is to reduce Department Defense (DoD) operations and support (O&S) costs by developing, testing, and inserting commercial technologies into fielded military systems. The cost of operating and

maintaining aging equipment is a major concern for DoD

because operations and support costs tend to rise as equipment ages. COSSI uses insertions of new technology to increase the reliability and reduce the operations and support costs of legacy systems. For example, figure 1 shows COSSI projects being done to improve the reliability and reduce the costs of operating and supporting the P-3 Orion aircraft.

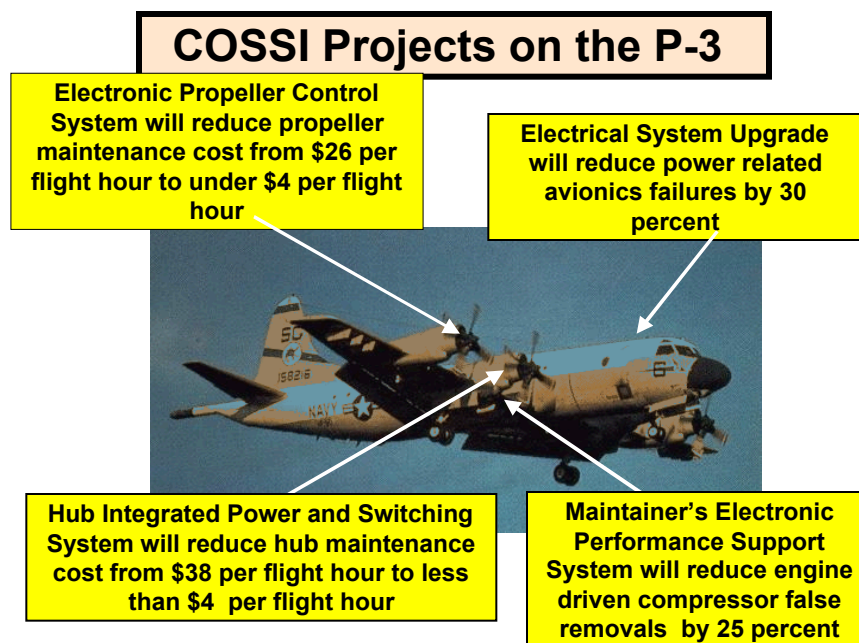


Figure 1

COSSI is also addressing obsolescence issues frequently associated with legacy systems. Some military-specific components in legacy systems are no longer manufactured and, therefore, difficult to acquire at any price. Using commercial items adapted to function in military systems (instead of military unique items) broadens the supplier base for spare parts.

COSSI is a two-stage process. In Stage I, a firm or a team that includes at least one for-profit firm, develops a prototype based on commercially available technologies. Stage I typically last two to three years. Proposals need to demonstrate that operations and support costs will be reduced after the prototype is inserted into the legacy system. DoD saves on R&D expenses because the core technology has already been

developed by the commercial sector. Project proposals must include written support from a "Military Customer" who has the authority to modify the system. After development, the prototype is tested to ensure it operates properly and will generate the projected savings. If the project is successful, production quantities of the prototype can be purchased and inserted into the host system in Stage II. COSSI program funds are only used to do Stage I. Procurement funds are used in Stage II.

Effectiveness

COSSI establishes Government and industry partnerships. The development of the prototype in Stage I is cost-shared between the government and industry reducing expenses for DoD. Cost sharing also signifies the contractor's commitment to the long-term success of the project. By involving commercial suppliers, COSSI is contributing toward the creation of an integrated military and commercial industrial base. Over one third of the firms participating in the COSSI program are considered non-traditional DoD suppliers.

Status

COSSI has provided over \$160 million for 60 projects since the program began in 1997. Contractors have provided an additional \$117 million. So far, seven projects have successfully completed Stage I development and entered into Stage II production.

Congress appropriated \$52 million for the COSSI program in FY 2001. Twenty new projects were selected for funding in FY 2001.

Future Plans

The next COSSI solicitation is scheduled for the second quarter of FY 2001. Proposals received will be evaluated and ranked. Selections are expected to be announced in August.

Accomplishments

Seven of the COSSI projects started in FY 1997 have transitioned to production.

Discontinuous Reinforced Aluminum (DRA):

Two companies are fabricating fuel access panels and ventral fins for F-16s using wider DRA sheets (widths from 27" to 36" and in some cases, larger). The material was used to fabricate 321 fuel access doors and 358 ventral fins. The material is also being considered for F-16 engine access covers.

Mini-MUTES:

The AN/MST-T1(V) Mini-Multiple Threat Emitter System (mini MUTES) is an Air Force Electronic Warfare training system that simulates threat radar so aircrews can practice countermeasures. The system had an aging proprietary computer processor that required a continuously controlled environment. The COSSI project replaced obsolete hardware and re-hosted software on a robust commercial bus based system. The Air Force is purchasing 65 mini-MUTES kits.

Mainframe Computer Replacement for Guardrail System:

Guardrail Common Sensor Main System software was ported from an antiquated mainframe computer running a proprietary operating system to a small modern UNIX based computer running an open operating system. The new computer is faster, more reliable, and easier to maintain. The previous computer cost over \$1M and was repaired by replacing expensive and obsolete circuit card assemblies. The new computer costs \$130K and is heading toward a \$60K computer with the potential for using a \$7K computer.

Movement Tracking System (MTS):

The project converted commercial satellite tracking systems for military applications. The COSSI project hardened the network interface, converted the commercial system to a multiple satellite service system providing for communication support of ground devices, and secured and encrypted all traffic. These enhancements allow the Army to maintain continuous command and control of in-theater transportation vehicles using commercial satellites. The project was so successful that the quantity of MTS devices was increased from the initial 12,500 devices to 33,000 with a contract option for up to 40,000. This technology has garnered great interest from other DoD and non-DoD agencies, and the law enforcement community. In addition, there is a promising spin-off of this technology into a hand-held version.

Health and Usage Monitoring System in the H-60, H-53 Helicopters:

This project developed an automated diagnostic and monitoring system for SH-60 and CH-53 helicopters. The system was designed to use an open architecture and commercial interfaces. The system will reduce operations and support costs by providing for continuous rotor track and balance, vibration monitoring of the gearbox, drive train, and engine, and structural usage monitoring. Data generated by the system removes uncertainty about condition and usage, facilitating maintenance planning and extending maintenance intervals.

Versa Module Europa (VME) MILSTAR Antenna Position Control Unit:

A replacement digital antenna controller using an open architecture and commercial standards was developed for the MILSTAR contingency ground station.

The old unit was military-unique, expensive, and less reliable than the new replacement unit. The open architecture design provides a cost effective migration path for future technology insertions. The Air Force is purchasing 32 units.

Data Distribution Kits for Command Centers:

This project replaced data distribution networks for Mobile Consolidated Command Centers (MCCC) and other C4I command systems. The original system was highly specialized and relied on outdated radio frequency cable technology. The project replaced the data transport systems, voice circuits, ethernet circuits, serial data communications circuits, and network management systems with a high-speed asynchronous transfer mode (ATM) network consisting of commercial ATM switches, communications servers, edge devices, private branch exchange (PBX), and network management system. The new network will have dramatically increased bandwidth. The new system also has an open architecture, which will facilitate supportability and make future upgrades easier.

Several other projects are scheduled to transition to production during FY 2001. Projects started in FY 1999 and FY 2000 are ongoing with transition to production expected to begin in FY 2002.